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Environmental Resources Management, inc.

855 Springdale Drive • Exton, Pennsylvania 19341 • (215) 524-3500 • Telex 4900009249

6 January 1989

Ms. Janet Feldstein
Regional Project Officer
Emergency and Remedial Response Division
U.S. Environmental Protection Agency
Region II
26 Federal Plaza
New York, NY 10278

File No: 802-01

RE: Project Operations Plan, Revision No. 10 prepared by
Environmental Resources Management, Inc. (ERM) for
Treatability Samples Collection.

Dear Janet:

ERM has evaluated and compared the field sampling procedures established by Dames and Moore in their Project Operations Plan, dated 4 March 1987 with the sample provisions established by ERM in the treatability sampling document dated, 4 January 1989.

We feel that the ERM provisions are more aggressive and appropriate for the proposed sampling activities, however, based on discussions at the 5 January 1989 Progress Meeting, we will follow the applicable sampling procedures defined in the original POP and relevant POP revisions. Therefore, the procedures and protocols contained in Sections 6.4 through section 7.2 of the above ERM sampling document will be superceded by the POP procedures.

We are committed to following the EPA/NJDEP approved procedures and protocols. Should there be any further discrepancies or modifications ERM will adopt the prescribed procedures directed by the regulatory agencies. Please contact me or Frank Holmes, ERM Field Supervisor at (215) 524-3523 should there be any questions or concerns about the ERM sampling activities.

Very truly yours,

Steven A. Croce
Project Manager

SAC: Pam Lange, NJDEP
Gil Weil, PRP Group

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Letter of Transmittal

TO JANET FELDSTEIN
USEPA REG. II
26 FEDERAL PLAZA
NEW YORK, NY 10278

DATE	1/6/89	W.O. No.
ATTENTION		
RE: ANALYTICAL TABLES		
FOR SCP CARLSTADT		
TREATABILITY SAMPLES		

GENTLEMEN:

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via _____ the following items:

- ☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications
☐ Copy of letter ☐ Change order ☒ TABLES FOR ANALYTICAL WORK

COPIES	DATE	NO.	DESCRIPTION
1			TABLE 1 (2 pages) "SUPPLEMENTARY TABLE FOR (UNTREATED) AS-RECEIVED Y - SOILS AND SLUDGES! FOR THE TREATABILITY STUDY WORK PLANS.
1			TABLE 2 (3 pages) "SUPPLEMENTARY TABLE FOR TREATED SAMPLES - SOILS AND SLUDGES! FOR THE TREATABILITY STUDY WORK PLANS

THESE ARE TRANSMITTED as checked below:

- ☒ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval
☐ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution
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☐ For review and comment ☐ _____
☐ FOR BIDS DUE _____ 19 _____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS THESE TABLES INCLUDE:
- THE CLP LABORATORY TO BE USED
- THE POINT AT WHICH SAMPLE WILL BE TAKEN IN THE
PROGRAM
- THE SAMPLE TYPE
- ANALYSES REQUIRED (I.E. PARAMETERS FOR EACH
SAMPLE TYPE)
- ANALYTICAL METHODS

NOTE: ONLY EPA METHODS ARE TO BE USED, EXCEPT FOR
NON-CONTAMINANT SOIL TESTS AND OFF-GAS MONITORING.

COPY TO PAT LANGE, NJDEP
HARRY YEH, EBASCO
DIANE LEBEL, CIBA-GEIGY
GIL WEIL, UCC

SIGNED: Stuart A. Crane

If enclosures are not as noted, kindly notify us at once.

TABLE 1

SUPPLEMENTARY TABLE FOR AS RECEIVED (I.e., UNTREATED) SAMPLES- SOILS AND SLUDGES: FOR THE TREATABILITY STUDY WORK PLANS

Note: CompuChem Labs, with CLP Certification will perform all analyses, unless otherwise noted.

SCP/CARLSTADT SITE

ANALYSIS OF SAMPLES PRIOR TO TREATMENT:

Applicable Technology	Sampling Point	Sample Type	Analysis Required	Analytical Method
1. Solidification/ Stabilization	SCP site soils	Hot Spot- Lead, as received	Lead	Contract Laboratory Program (CLP) protocol
	SCP site soils	Hot Spot- VOCs, as received	VOCs	Contract Laboratory Program (CLP) protocol
	SCP site soils	Hot Spot Composite:		
		a. As Received	a. Full TCL constituent list	a. Contract Laboratory Program (CLP) protocol
		b. Matrix Spike	b. Full TCL constituent list	b. Contract Laboratory Program (CLP) protocol
		c. Matrix Spike Duplicate	c. Full TCL constituent list	c. Contract Laboratory Program (CLP) protocol
		d. Blank	d. Full TCL constituent list	d. Contract Laboratory Program (CLP) protocol
	SCP site soils	Overall Composite:		
		a. As Received	Full TCL constituent list	Contract Laboratory Program (CLP) protocol
		b. Matrix Spike	Full TCL constituent list	Contract Laboratory Program (CLP) protocol
		c. Matrix Spike Duplicate	Full TCL constituent list	Contract Laboratory Program (CLP) protocol
	SCP site sludge [1]	Hot Spot- B/N:		
		a. As Received	Base neutrals (B/N)	Contract Laboratory Program (CLP) protocol
		b. Matrix Spike	Base neutrals (B/N)	Contract Laboratory Program (CLP) protocol
		c. Matrix Spike Duplicate	Base neutrals (B/N)	Contract Laboratory Program (CLP) protocol
	SCP site sludge [1]	Tank and Pit Composite, As Received	Full TCL constituent list	Contract Laboratory Program (CLP) protocol

Note: [1] Sludge samples obtained from the former pit area and the sludge tank.

TABLE 1 (CONT.)

ANALYSIS OF SAMPLES PRIOR TO TREATMENT:

Applicable Technology	Sampling Point	Sample Type	Analysis Required	Analytical Method
2. Contaminant Extraction	SCP site soils	Hot Spot- Lead, As Received	(The sample type and analysis is the same as for solidification/stabilization.)	
	SCP site soils	Hot Spot- PCBs, As Received	PCBs	Contract Laboratory Program (CLP) protocol
	SCP site soils	Hot Spot Composite:	(The sample type and analysis is the same as for solidification/stabilization.)	
	SCP site soils	Overall Composite:	1. The sample type and contaminant analysis is the same as for solidification/stabilization. In addition, the following soil characterization tests would be conducted: 2. Particle size analysis 3. Maximum Particle size 4. pH 5. Humus content	
			ASTM D-422 (performed by McClelland Engr.)	
			ASTM D-422 (performed by McClelland Engr.)	
			Per EPA's SW-846 (performed by McClelland)	
			Walkley-Black Method for Total Organic Carbon (performed by McClelland Engr.)	
	SCP site sludge [1]	Hot Spot- B/N:		
		a. As Received	a.Base neutrals (B/N)	a.Contract Laboratory Program (CLP) protocol
		b. Matrix Spike	b.Base neutrals (B/N)	b.Contract Laboratory Program (CLP) protocol
		c. Matrix Spike Duplicate	c.Base neutrals (B/N)	c.Contract Laboratory Program (CLP) protocol
	SCP site sludge [1]	Tank and Pit Composite, As Received	(The sample type and analysis is the same as for solidification/stabilization.)	
3. Thermal Treatment	SCP site soils	Overall Composite:	(The sample type and analysis is the same as for solidification/stabilization.)	
	SCP site sludge [1]	Tank and Pit Composite, As Received	(The sample type and analysis is the same as for solidification/stabilization.)	

(Note: No raw soil or sludge samples require metals analysis, since interest of study is limited to metals remaining in the ash.

Note: [1] Sludge samples obtained from the former pit area and the sludge tank.

**SUPPLEMENTARY TABLE FOR TREATED SAMPLES- SOILS AND SLUDGES: FOR TREATABILITY STUDY WORK PLANS
SCP/CARLSTADT SITE**

TABLE 2

ANALYSIS OF TREATED SAMPLES:

Treatment Technology	Sampling Point	Sample Type	Analysis Required	Analytical Methods
I. Solidification/ Stabilization	End of Round 2 design mix development	1. Each design mix plug:		
		a. After 3-day curing	a. Unconfined compressive strength (UCS)	a. Cohesive soil-like materials: ASTM-2166 Monolithic materials: ASTM-1633
		b. After 7-day curing: -Original	b. UCS	b. (Same as for the 3-day cured plug)
		-Duplicate	b. UCS	b. (Same as for the 3-day cured plug)
		c. After 14-day curing	c. UCS	c. (Same as for the 3-day cured plug)
	End of Round 3 design mix development	1. Each design mix plug:		
		a. After 3-day curing:	a. UCS	a. Cohesive soil-like materials: ASTM-2166 Monolithic materials: ASTM-1633
		b. After 7-day curing: -Original	b. UCS	b. (Same as for the 3-day cured plug)
		-Duplicate	b. UCS	b. (Same as for the 3-day cured plug)
		c. After 14-day curing:	c. (a.) UCS (b.) Triaxial permeability (c.) Extraction leachate development (d.) Extraction leachate quality organics analysis: All TCL constituents included in the VOC, B/N, PCB, acid extractable and petroleum hydrocarbon categories (e.) Extraction leachate total cyanide analysis	(a.) (Same as for the 3-day cured plug) (b.) EPA Standard Method 9100 (from SW-846) (c.) EPA's EP Toxicity (d.) Contract Laboratory Program (CLP) protocol (e.) Contract Laboratory Program (CLP) protocol
		2. Each Hot Spot- Lead design mix plug, after 14-day curing:	a. Extraction leachate lead analysis	a. Contract Laboratory Program (CLP) protocol
		3. Each design mix for the Hot Spot Composite and for the Overall Composite	a. Extraction leachate analysis for these indicator metals: lead, chromium, and copper	a. Contract Laboratory Program (CLP) protocol
		4. Each design mix for the Tank and Pit Composite	a. Extraction leachate analysis for these indicator metals: lead, chromium, and copper	a. Contract Laboratory Program (CLP) protocol

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TABLE 2 (CONT.)

ANALYSIS OF TREATED SAMPLES:

Treatment Technology	Sampling Point	Sample Type	Analysis Required	Analytical Methods
II. Contaminant Extraction	1. After each process trial ("shakeout") consisting of at least four separate extractions	Treated Hot Spot- Lead sample	Lead	Contract Laboratory Program (CLP) protocol
		Treated Hot Spot- PCBs sample	PCBs	Contract Laboratory Program (CLP) protocol
		Treated Hot Spot Composite sample:	Extraction leachate quality organics analysis: All TCL constituents included in the VOC, B/N, PCB, acid extractable and petroleum hydrocarbon categories; plus indicator metals: lead, chromium, and copper	Contract Laboratory Program (CLP) protocol
		Treated Overall Composite sample:	Extraction leachate quality organics analysis: All TCL constituents included in the VOC, B/N, PCB, acid extractable and petroleum hydrocarbon categories; plus indicator metals: lead, chromium, and copper	Contract Laboratory Program (CLP) protocol
		Treated Hot Spot- B/N sample:	Full set of B/N constituents	Contract Laboratory Program (CLP) protocol
		Treated Tank and Pit Composite sample	Extraction leachate quality organics analysis: All TCL constituents included in the VOC, B/N, PCB, acid extractable and petroleum hydrocarbon categories; plus indicator metals: lead, chromium, and copper	Contract Laboratory Program (CLP) protocol
	2. After completion of each shakeout test	Used extraction fluids after the 1st and last extraction in each shakeout test; for each extraction fluid used; for each of the following sample types:		
		a. Hot Spot- Lead	a. Lead	Contract Laboratory Program (CLP) protocol
		b. Hot Spot- VOCs	b. VOCs	Contract Laboratory Program (CLP) protocol
		c. Hot Spot Composite:	c. All TCL constituents included in the VOC, B/N, PCB, acid extractable and petroleum hydrocarbon categories; plus indicator metals: lead, chromium, and copper	Contract Laboratory Program (CLP) protocol

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TABLE 2 (CONT.)

ANALYSIS OF TREATED SAMPLES:

Treatment Technology	Sampling Point	Sample Type	Analysis Required	Analytical Methods
III. Thermal Treatment		d. Overall Composite:	d. All TCL constituents included in the VOC, B/N, PCB, acid extractable and petroleum hydrocarbon categories; plus indicator metals: lead, chromium, and copper	Contract Laboratory Program (CLP) protocol
		e. Hot Spot- B/N:	e. Full set of B/N constituents	Contract Laboratory Program (CLP) protocol
		f. Tank and Pit Composite:	f. All TCL constituents included in the VOC, B/N, PCB, acid extractable	Contract Laboratory Program (CLP) protocol
	Prior to treatment	Each raw sample type	Melting point of sample (to guide selection of rotary kiln temperature)	ASTM Method
	During treatment	Afterburner off-gas:	1.CO, CO2, SO2, and NOX	Continuous emission monitoring, using chemical luminescence for NOX, nondispersive infrared for CO and CO2, and nondispersive UV for SO2
			2.Total hydrocarbons	Gas chromatography with flame ionization detector, calibrated per EPA protocol
			3.Total concentration of each of the following metals: As, Be, Cd, Cr, Cu, Pb, Hg, Ni, Se, Ag, and Zn	Contract Laboratory Program (CLP) protocol
	After treatment	Ash resulting from thermal treatment	Total concentration of each of the following metals: As, Be, Cd, Cr, Cu, Pb, Hg, Ni, Se, Ag, and Zn	Contract Laboratory Program (CLP) protocol
			Leachable concentration of the following metals: As, Be, Cd, Cr, Cu, Pb, Hg, Ni, Se, Ag, and Zn; leachate	Leachate developed per EP Toxicity; leachable metals per Contract Laboratory Program (CLP) protocol

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Environmental Resources Management, inc.

855 Springdale Drive • Exton, Pennsylvania 19341 • (215) 524-3500 • Telex 4900009249

4 January 1989

Ms. Janet Feldstein
Regional Project Office
Emergency and Remedial Response Division
U.S. Environmental Protection Agency Region II
26 Federal Plaza
New York, New York 10278

File No: 802-01

RE: Revision No. 10-Project Operations Plan, SCP Carlstadt
Operable Unit FS

Dear Ms. Feldstein:

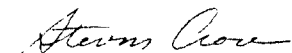
The 4 March 1987 Dames & Moore Project Operations Plan (POP) was developed specifically for conducting a Remedial Investigation (RI) at the SCP site in Carlstadt, New Jersey. It addresses the specific field activities and analytical program required to characterize the nature and extent of the on-site contamination.

The treatability studies being conducted as part of the First Operable Unit Feasibility Study (OUFS) are designed to determine the effectiveness of various remedial technologies for soil/sludge and ground water contamination. As such, they require different sample types, sample volumes, and sampling methods than those required by the RI.

The attached sampling plan is being submitted to revise sections 7.9 and 7.11 of the POP on ground water and soil sampling, to address the specific soil/sludge and ground water sampling needs of the proposed treatability studies.

Five (5) copies of the POP Revision 10 Sampling Plan are being submitted for your timely review and approval. Should you have any questions please contact me or Mr. Edward Sullivan at (215) 524-3848.

Very truly yours,



Steve Croce
Project Manager

SC/sw

cc: Mr. H. Gilbert Weil PRP Group
Ms. Pam Lange, NJDEP